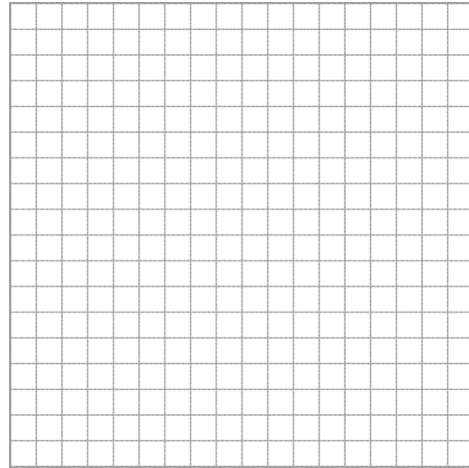


5-9: Linear Programming I

Warm-up: In the homework from question 14, you should have found that the vertices of the feasible set were $(0, 140)$, $(60, 100)$, $(0, 0)$, and $(193 \frac{1}{3}, 0)$. If there is a profit of \$20 on each suit and \$40 on each coat, how many suits and coats must be made to maximize the profit?

$$\begin{cases} s \geq 0 \\ c \geq 0 \\ 2s + 3c \leq 420 \\ 3s + 4c \leq 580 \end{cases}$$



Linear Programming Problems:

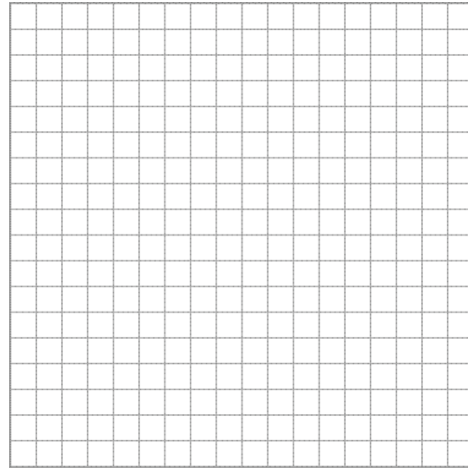
Linear Programming Theorem:

Profit Equation:

Example 1: Matt Mitarnowski's Snack Factory packages bags of mixed nuts. He has 75 lbs of cashews and 120 lbs of peanuts. They will be mixed in 1 lb packages in the following ways:

- A low-grade package that contains 4 oz of cashews and 12 oz of peanuts
- A high-grade package with 8 oz each of cashews and peanuts

A profit of \$.35 per package is made on the low-grade and \$.55 on the high-grade. How many packages of each must be made for maximum profit?



That sure takes a loooooooooooooooooooooooooong time. Can't we speed it up a little bit?

Homework:

"Be nice and smile to everyone you meet. You don't know what they are going through, and they may need that smile, and treasure it."

- Christine M. Huppert